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Maintaining Economic Competition: the Causes and Consequences of Antitrust

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Economic competition is part of the American creed. When it appeared seriously threatened by the growth of the "trusts" at the end of the nineteenth century, the Sherman Act was passed. Since then, Congress has enacted further antitrust legislation to preserve economic competition. Moreover, the platforms of the major political parties have regularly contained an antitrust plank. While Richard Hofstader could once write that the antitrust movement was "one of the faded passions of American reform," this no longer seems true.¹ Current surveys suggest that the public is again aroused over big business abuse, and increasingly favors the breakup of large corporations.² Checking corporate excesses and heightening competition are primary goals of consumer advocates.³ In the

¹ The Paranoid Style in American Politics and other Essays, (New York: Knopf, 1965), 188.


³ Mark J. Green with Beverly C. Moore, Jr. and Bruce Wasserstein, The Closed Enterprise System (New York: Grossman, 1972); Ralph Nader, Mark Green, and Joel Seligman, Taming the Giant Corporation (New York: W. W. Norton, 1976).
1976 presidential campaign, both candidates came out strongly for strict antitrust enforcement.4

Despite this contemporary interest, and the prominence of antitrust as an abiding value in American politics, it has received remarkably little systematic, quantitative study. Of course, a number of works on antitrust are available, but they tend to be legalistic or speculative.5 As economists Clair Wilcox and William Shepherd observe, "There exists no recent, full, analytical appraisal of antitrust's effects."6 A leading scholar of antitrust law, Richard Posner argues that this lack of statistical investigation is a major reason for inefficient enforcement.7 His own impressive examination is essentially an accounting of the number and types of cases over time. My analysis takes the next step, focusing on the causes and consequences of these enforcement patterns. After considering the purposes and measurement of antitrust efforts, I evaluate leading hypotheses on the political and economic determinants of antitrust enforcement. Then, I analyze the impact of antitrust policy, to see whether it actually helps or hinders economic competition.

**ANTITRUST ENFORCEMENT**

There are a number of laws whose ostensible purpose is the preservation of economic competition. Major legislation in this area includes the Sherman Antitrust Act (1890), which outlawed combinations in "restraint of trade" and "monopolization;" the Clayton Act (1914), which specifically made illegal price discrimination, exclusive and tying contracts, intercorporate stockholdings, and interlocking directorates, when they "substantially lessen competition;" and the Celler-Kefauver Antimerger Act (1950), which strengthened the prohibitions of the Clayton Act against acquisition

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of stock or assets of a competing corporation. The Antitrust Division of the Justice Department and the Federal Trade Commission (FTC) are the organizations chiefly responsible for enforcement of the antitrust laws. While I ultimately examine the role of both, I focus on the Antitrust Division because it is older, has more prestige, has more money for antitrust efforts, and is generally considered more effective.

As Mark Green and his colleagues remark, "filing cases is the Division's main business." Therefore, I take the annual number of antitrust cases initiated as the primary measure of enforcement activity, as did Posner. Data were gathered on the number of antitrust cases instituted each year by the Justice Department, from 1890 to 1974 (the mean number of cases brought annually = 21.22, the standard deviation = 18.68).

**THE INFLUENCE OF ECONOMIC COMPETITION ON ANTITRUST ENFORCEMENT**

Given that the prime goal of the Antitrust Division is maintaining economic competition, a reasonable expectation is that enforcement would increase in response to diminished competition. A difficulty with testing this hypothesis stems from the lack, among economists, of a generally accepted definition of competition. However, a number of measures have served as proxies for economic competition, and clearly appear relevant to the Division's mission. I look at two such measures: mergers and aggregate concentration. My emphasis will be on mergers because, in addition to offering a better data base, they are conceptually more satisfactory.

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11 Posner, "A Statistical Study."


The leading student of American merger movements, Ralph Nelson, defines a merger as "the combination into a single economic enterprise of two or more previously independent enterprises." Willard Mueller, former Director of Economics at the FTC, argues that mergers, more than any other economic factor, explain the structure of United States industry. Political scientists have used merger figures as a principle indicator of competitiveness in the economy. For economists, however, the conceptual overlap between mergers and (reduced) competition is not as complete. The dispute centers on the type of merger which occurs. A horizontal merger, which joins direct competitors, clearly reduces competition. But some contend that a vertical merger (the union of buyer and seller) or a conglomerate merger (combination of firms which neither directly compete nor are in a buyer-seller relationship), may have a neutral, rather than a negative, impact on competition. The great bulk of industrial combinations have been horizontal, but conglomerate mergers have recently assumed more importance. Unfortunately, these discriminations as to kind of combination cannot be made over the span of merger observations. This limitation is not particularly troublesome here, because the government has regarded conglomerate mergers as harmful to competition. However, in the consideration of antitrust effects, where this is an important issue, an attempt will be made to separate out conglomerate mergers.

Drawing on various sources, a lengthy series of annual observations on mergers in manufacturing and mining was assembled, extending from 1895-1973 (the mean = 604.32, the standard deviation = 597.11). The central hypothesis is that as mergers, Xₜ, in-

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17 Wilcox and Shepherd, Public Policies, 227-231.
19 The observations for 1895-1918 are from Nelson, Merger Movements, 37, Table 14, corrected for underreporting (Nelson, Merger Movements, 25-28) by multiplying each observation by 3.2, the ratio derived from the overlapping
crease, the Antitrust Division will increase its enforcement activity, indicated by a rise in cases filed, $Y_t$. Ordinary least squares (OLS) regression of $Y_t$ on $X_t$ yields,

$$Y_t = 19.976 + .003X_t + e_t$$

(1.1)

$$(6.75) \quad (1.00)$$

$R^2 = .013\quad d = .36\quad N = 79$

where $R^2$ = the coefficient of determination, $d$ = Durbin-Watson statistic, $N$ = number of observations, $e$ = error, and the values in parentheses below the parameter estimates are the t ratios.

The coefficient for $X_t$ is not significant at the .05 level. (When $|t| > 2.0$, the parameter estimate is considered significant at the .05 level, with a two-tailed test. This is the level and test of significance that will be used throughout the paper). A protest might be registered against this negative conclusion. A legitimate expectation is that the antitrust response is delayed, rather than immediate. The enforcement role of the Antitrust Division is largely passive. It is spurred to action when a complaint is received, often from members of the business community who are in competition with the supposed lawbreaker. On the average, it takes about one year of investigating the complaint before a case would actually be filed. Therefore, it could be a few years before the less competitive environment translated itself into antitrust cases instituted. More formally, the suggestion is that a realistic model would lag the merger variable $n$ number of years, i.e.,

$$Y_t = a + bX_{t-n} + e_t$$

(1.2)

This model was estimated, first lagging mergers one year, $X_{t-1}$, and


21 Green et al., Closed Enterprise, 118-119, 136.
then lagging it t-2, t-3, t-4, and t-5. The slope estimate becomes even less significant than in Eq. 1. In enforcing the antitrust statutes, the Division apparently fails to react to the general level of merger activity.

Lack of attention to mergers does not necessarily mean that the Justice Department is unresponsive to all signs of competitive conditions. Economic concentration measures are currently popular devices for assessing competition. There are two basic types of concentration: market and aggregate. Market concentration refers to the degree of control of an industry by its major firms. As an industry becomes dominated by its leading firms, it tends to lose its competitive structure. For example, some argue that when the top four firms have 50 percent of the market (a "four-firm concentration ratio of 50 percent"), monopolistic conditions prevail. While the use of a market concentration ratio has great appeal, it does not appear feasible in the context of this time-series analysis. F. M. Scherer, in his excellent treatment of the economic concentration issue, explicitly warns that "long run analyses [of market concentration] plunge us into the realm of incommensurables." Part of the problem is that the industry definitions, which are used to develop the concentration ratios, have not remained constant over time; also, observations exist on relatively few years. Nevertheless, while the impact of market concentration cannot be directly assessed, there is evidence that it is related to aggregate concentration, which is measured here.

Aggregate concentration refers to the extent to which manufacturing assets or sales in the entire economy are controlled by a few corporations. Students of American politics have been especially sensitive to the apparent rise in aggregate concentration, in part because of the implication that reduced economic competition means

reduced political competition.\textsuperscript{25} The measure I use is the common one of the percentage of total manufacturing assets held by the nation's 200 largest corporations, 1929-1973.\textsuperscript{26} According to this indicator, aggregate concentration has risen rather steadily over time, measuring 45.8 percent in 1929 and 56.9 percent in 1973. Has antitrust enforcement intensified in order to combat this heightened economic concentration? Apparently not.

Regressing (OLS) enforcement activity, $Y_t$, on aggregate concentration, $X_t$, initially suggests there is a significant positive impact, which increases as $X_t$ is lagged to three years, $b_{t-3} = 1.94$, ($t = 3.76$). But before adopting this finding, it is necessary to recall that the data compose a time-series. Hence, the $t$ ratios from OLS are generally biased in the direction of showing statistical significance, because of the usual correlation of the error terms. In this particular instance, the bias could lead to accepting, incorrectly, the hypothesis that aggregate concentration significantly influences antitrust enforcement. The Durbin-Watson statistic for the regression, $d = .95$, does suggest an autocorrelation problem. To adjust for it, I reestimate using the Cochrane-Orcutt (CORC) iterative procedure, which assumes a first-order autoregressive model of the error terms. This revised, correct estimate of the slope indicates that, in fact, aggregate concentration has no significant effect on antitrust cases filed, $b_{t-3} = .89$, ($t = 1.15$). (This example illustrates the misleading results that ordinary least squares estimation can


\textsuperscript{26} The observations for 1929-1941, 1947-1968 are from FTC, \textit{Economic Report}, 173, Table 3-3. The observations from 1969-1973 are from Census, \textit{Statistical Abstract 1975}, 502, No. 825. Data from 1942-1946 were not available; therefore, the mean of the series was substituted for each of these years. This procedure yields least squares estimators known as "zero order regression estimators." One advantage of these estimators is that when the correlation between X and Y is low, as it appears here, the mean square error of these estimators is smaller than that of OLS estimators calculated strictly from the cases with no missing values; see Jan Kmenta, \textit{Elements of Econometrics} (New York: Macmillan, 1971), 341-345.
generate with time-series data. Therefore, my general analytic strategy will be to correct for autocorrelation with the CORC procedure before drawing any final conclusions about the presence of an effect. Further, a word about lagged values is in order. Throughout the paper, whenever it seems theoretically plausible that an effect might be delayed, the hypothesis is examined by lagging the independent variable up to three years, at least. The slope coefficient finally reported comes from the lag, \( t-n \), or nonlag, \( t \), which allowed the variable its maximum possible impact. In this way, more opportunity was given for a relationship to emerge, if one existed.\(^{27}\)

In evaluating this negative result on the effect of aggregate concentration, a caution must be entered. Even though "percentage of assets held by the top 200 corporations" is one of the better available...

\(^{27}\)The statistical package used to obtain the OLS estimates and these Cochrane-Orcutt (CORC) estimates was the Econometric Software Package (ESP), developed by J. Phillip Cooper, Graduate School of Business, University of Chicago. For discussion of CORC, see Kmenta, *Elements*, 269-292, from which the following description of the procedure is drawn. Assume we apply the CORC adjustment to this simple bivariate regression model.

\[ Y_t = a + bX_t + e_t. \]

Step 1. Estimate the equation with OLS.
Step 2. Calculate the residuals, \( \hat{e}_1, \hat{e}_2, \ldots, \hat{e}_n \).
Step 3. Obtain an autocorrelation estimate, \( \hat{\rho} \), by correlating \( \hat{e}_t \) with \( \hat{e}_{t-1} \).
Step 4. Construct the adjusted variables, \( (Y_t - \hat{\rho}Y_{t-1}) \) and \( (X_t - \hat{\rho}X_{t-1}) \).
Step 5. Obtain parameter estimates adjusted for autocorrelation by securing OLS estimates of \( (Y_t - \hat{\rho}Y_{t-1}) = a^* + b(X_t - \hat{\rho}X_{t-1}) + u_t \).
Step 6. Repeat the above process (i.e., estimating autocorrelation, constructing new variables, and estimating the parameters) until the parameter values stabilize.

While this iterative procedure may appear quite lengthy, my experience is that convergence is achieved after a few rounds (1-5), and that the initial autocorrelation estimate is quite close to the final one. The practical implication is that, in general, it is fairly safe to stop with the parameter estimates obtained after the first autocorrelation adjustment. In fact, Kmenta, *Elements*, 288 notes that the estimators from this "two-stage" procedure have the same asymptotic properties as the maximum likelihood estimators.

Hopefully, it is obvious that if the OLS estimates are not significant, the CORC estimates will likewise not be significant, given the positive autocorrelation which infects almost all time-series data. Thus, if Eq. 1, which aims to estimate the impact of mergers on antitrust enforcement, is reestimated using CORC, the nonsignificance reported with the OLS equation holds. The CORC estimate indicates that the effect of mergers is even less significant, as would be expected, \( bY_tX_t = .001 \), \( (t = .42) \).
able measures of aggregate concentration, it poses serious analysis difficulties. Scherer, who himself relies on this type of measure, admits that the problems with using the aggregate concentration indicators over time are acute. For example, the limited variation of aggregate concentration values (here the range is only 15.8 percent) makes these parameter estimates rather unreliable. Thus, because the null finding on aggregate concentration may very well be in error, I report it with some tentativeness. However, outside support comes from the view, held by some economists, that mergers are a major cause of aggregate concentration. (The data at hand do show that mergers are correlated .729 with aggregate concentration.) Given the two are highly related, the expectation would be that aggregate concentration, like mergers, has no effect on antitrust enforcement, which is indeed my finding.

The foregoing linear regression analyses of the merger and aggregate concentration variables suggest, surprisingly, that antitrust activity is independent of changing levels of economic competition. Notwithstanding legislative intent, the Division's enforcement of the antitrust laws does not appear stimulated by indications of intensified anticompetitive behavior. This finding compliments John Siegfried, who concludes that consideration of economic benefits, "in the

28 Scherer, Industrial Market Structure, 41.
29 On this difficulty, see Kmenta, Elements, 297.
31 This high correlation between mergers and aggregate concentration also suggests the rationale for the bivariate hypothesis testing strategy which I employ. The independent variables of this study generally exhibit extreme multicollinearity, which means their effects often cannot be reliably separated in multiple regression analysis. Suppose the equation $Y = a + b_1X_1 + b_2X_2 + e$. A high positive correlation of $X_1$ with $X_2$ could produce an estimate of $b_2$ that is statistically insignificant, even if $X_2$ were actually a cause of $Y$ (see Kmenta, Elements, 405). Determining whether this insignificant result is valid, or simply a product of multicollinearity, can be difficult. One approach is to analyze the effect of $X_2$ in a separate equation, $Y = a + b_2X_2 + e$. This allows $X_2$ to maximize its apparent effect on $Y$, for it does not have to "share" the explanation with $X_1$. Of course, the estimate for $b_2$ will be biased, exaggerating the effect of $X_2$ (see Kelejian and Oates, Introduction, 217-219). Under these unduly favorable conditions of the bivariate regression model, if statistical significance is not uncovered, then its emergence in a multiple regression context would neither be expected nor reliable.
form of efficiency gains and income redistributions,” does not influence antitrust case work. Such results prompt the further question of whether antitrust activity is at all responsive to the economic environment. Posner offers the hypothesis that enforcement varies with the general state of the economy. Periods of economic expansion, for example, might be accompanied by a greater incidence of antitrust violations, causing more cases to be brought. This possibility was tested by regressing antitrust cases filed, \( Y_t \), on the GNP growth rate, \( X_t \), and, then, on the unemployment rate, \( Z_t \). Estimation (CORC) indicates the GNP growth rate is not significantly related to antitrust enforcement, \( b_{x_t} = .03 \), \( (t = .20) \). Similarly, significance is not approached when the GNP variable is lagged \( (t-1, t-2, t-3) \). Also, the supposed significant effect of unemployment also fails to emerge (CORC), \( b_{z_t} = .46 \), \( (t = 1.16) \).

Thus, the overall level of economic activity does not seem to influence the level of antitrust enforcement. Nor is it more specifically affected by the degree of competitiveness in the economy. Contrary to expectations, antitrust enforcement is quite unrelated to presumably relevant conditions of the economic system.

The Influence of Partisan Politics on Antitrust Enforcement

Upon reflection, the absence of an antitrust response to diminished economic competition appears less surprising. A rationalistic view of law enforcement, which supposes increased crime produces more crime-fighting, is perhaps naive. The traditional notion that an agency mechanically administers the law as need be, in the form handed to it by the “political” branches of government, is no longer widely held. Instead, it is recognized that politics pervades ad-

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35 Frank J. Goodnow, Politics and Administration (New York: Russell and Russell, 1900).
The Antitrust Division provides no exception to this rule. In addition to formal political influences (e.g., the President appoints the head, the Congress sets the budget), the Division is often subject to informal political pressures. The President sometimes pushes for a case to be initiated or dropped. Members of Congress do likewise. For example, it was claimed Senator Pastore "... preached anti-poverty to the Justice Department and has all but undone the Government's assault on Kaiser Aluminum Chemical Corp.'s (sic) acquisition from the U.S. Rubber of a wire and cable plant in Bristol, Rhode Island." 

It is reasonable to assume that these instances of political influence are motivated in part by partisan considerations. A common belief is that Republicans, because of their allegedly greater attachment to the free enterprise system, pursue antitrust enforcement more earnestly than Democrats. Others contend that support for antitrust is bipartisan. Below, I examine the effect of partisanship on antitrust enforcement, looking first at the Presidency and then at the Congress.

Since the Sherman Act, both Democratic and Republican presidents have occasionally asserted themselves on the antitrust issue. Although Theodore Roosevelt cultivated his reputation as a serious trustbuster, his immediate successors actually started more cases than he did. Democrat Woodrow Wilson, for example, initiated over twice as many suits as TR. In his 1912 campaign against Roosevelt, Wilson spoke out forcefully against big business combinations: "The masters of the government of the United States are the combined capitalists and manufacturers of the United States. . . . [the laws should] pull apart, and gently, but firmly and persistently dissect." But after Wilson, antitrust languished under the Republican presidencies of Harding, Coolidge, and Hoover. In the eyes of one critic, during these Republican administrations, "in-

36 For a superb discussion of the "politics" of antitrust, see Green et al., Closed Enterprise, Ch. 2.
38 Nadel, Corporations, 236, explicitly endorses this view.
39 See Green et al., Closed Enterprise, 113.
41 Quoted in Hofstadter, The Parnoid Style, 208.
Industry enjoyed, to all intents and purposes, a moratorium from the Sherman Act..."42

Such patterns hint that, in fact, Democratic presidents are more vigorous enforcers of antitrust. But these examples are confined to a few administrations. To discover if a general partisan impact exists, I regress annual number of cases filed, \( Y_t \), on the President’s party label, \( X_t \).43 However, it is perhaps unrealistic to expect that the presidential impact would make itself felt immediately; after taking office, some time will pass before the President presses for a suit and finally gets it instituted. Indeed, OLS estimates suggest this is the pattern, for apparently significant effects do not emerge until \( X_{t-3} \). But, when the CORC adjustment is made this relationship does not hold up, \( b_{X_{t-3}} = -0.88, (t = -0.23) \). The conclusion is that the President does not exert a significant partisan influence on antitrust enforcement. This result parallels that of Posner.44 Still, one may charge that this analysis fails to incorporate the more qualitative impact of presidential partisanship. To investigate this possibility, Posner related the initiation of “landmark” cases to presidential party, and again found a negligible relationship.45 Clearly, at least at the presidential level, antitrust enforcement is a bipartisan affair.

Congressional influence in antitrust is extensive. In addition to deciding on the Division’s budget, Congress may actually grant special treatment to certain corporations, as with the Lockheed “bail-out” bill. Louis Kohlmeier estimates that about one-fourth of the nation’s businesses have been specifically exempted from the strictures of antitrust.46 Also, even the mildest inquiries from Congress receive immediate attention from the Division. All congressional correspondence is answered within 48 hours. In explaining this practice, a Policy Planning Director remarked, “They can de-

42 Quoted in Wilcox, Public Policies, 91.
43 Republican was scored “1” and Democrat was scored “0.” Observations, to 1900, were taken from U.S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957 (Washington, D.C.: Government Printing Office, 1960), 682-683, Series Y 27-31; observations for 1901-1975 were taken from Census, Statistical Abstract 1975, 435, No. 705.
45 Ibid., 412-413.
strow us with the stroke of a pen.”47 The Senate Antitrust and Monopoly Subcommittee, which was chaired by Phillip Hart, has the second largest subcommittee budget in Congress. It is regarded as more productive than the House Antitrust Subcommittee, which has a much smaller budget. This hints that partisanship might have greater opportunity for influence in the Senate than in the House. More generally, the direction (although not the significance) of the presidential findings suggests that as Republicanism in Congress increases, antitrust enforcement would diminish.

To examine the impact of Senate partisanship, the annual percentage of Republican seats, $X_t$, was used to predict antitrust cases instituted, $Y_t$. A similar equation was estimated for the House.48 Does antitrust enforcement vary with the changing partisan composition of the Congress? The answer is negative, for both houses. While the strength of the slope coefficient increases as $X_t$ is lagged, as one might expect, significance (.05 level) is never attained. For the Senate, the CORC estimate is $b_{y_t|x_{t-8}} = -0.36, (t = -1.59)$. This implies that, for every three additional Republican Senators, only one less antitrust case is pursued. However, even this apparent effect, trivial as it would be, is not statistically significant according to the $t$ ratio. The impact of House Republicanism appears still weaker; the comparable estimate is $b_{y_t|x_{t-8}} = -0.09, (t = -0.62)$.

Political party cleavages, while they may be quite important for other public outcomes, appear irrelevant for antitrust policy. Neither the party preference of the President, nor party differences in Congress exhibit a meaningful impact on the number of cases the Division files. This bipartisan hypothesis of antitrust enforcement receives further endorsement when the dependent variable is the Division’s budget, rather than its cases.49 In his work on the politics

47 Green, et al., Closed Enterprise, 119.
48 The annual percentage of Senate and House seats, respectively, that were Republican was calculated from Census, Historical Statistics, 691, Series Y139-145, for 1868-1958; and from Census, Statistical Abstract 1975, 444, No. 715, for 1959-1975.
49 The annual Antitrust Division budget figures (in thousands of current dollars) for 1921-1975 were taken from the actual outlays reported in the appropriate issues of U.S., The Budget of the United States Government (Washington, D.C.: Government Printing Office). To adjust the budget figure from current dollars to constant dollars, it was divided by the year’s Consumer Price Index ($1967 = 100$), given in Economic Analysis, Long Term Economic,
of congressional appropriations, Richard Fenno found that party control of the Congress can influence agency funding.\(^{50}\) However, the data at hand indicate that the Antitrust Division budget is not affected by variations in congressional partisanship (CORC estimates showed that percentage of Republican seats for the Senate, \(X_t\), and House, \(Z_t\), in turn, were not significantly related at the .05 level to the Antitrust Division budget, \(Y_t\), even lagging the partisanship measures up to three years: \(b_{Y_t} = 1.11, t = .42\). This null finding was repeated when President's party, \(P_t\), was used as the independent variable, \(b_{Y_t} = 1.11, t = .42\)).

While these results may be interpreted as bipartisan support, it is certainly not eager support. Neither Democrats nor Republicans seem firmly committed to maintaining economic competition. Of course the Antitrust Division budget has grown, but at a slower pace than that of most other agencies.\(^{51}\) What backing it has seems due largely to its law enforcement role, which members of Congress tend to view as "essential."\(^{52}\) However, unlike the FBI, the Division is not granted virtually whatever it requests.\(^{53}\) The congressional goal for antitrust is not one of "stamping out anticompetitive crime." Rather the aim appears to be maintaining minimal, perhaps merely symbolic, protection for the business community and the public-at-large. This implication is bolstered when the effects of antitrust enforcement are analyzed.

### The Effects of Antitrust Enforcement

Although antitrust has occupied a prominent place in American political lore, there is little quantitative knowledge of its competitive impact. Georgge Stigler suggests scholars have shied away from a quantitative assessment because "The task is formidable."\(^{54}\) That is has remained so is apparent from the current evaluation by Wilcox and Shepherd, who conclude "nobody really knows what

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\(^{50}\) The Power of the Purse (Boston: Little, Brown, 1966), 382-384.

\(^{51}\) Green, et al., Closed Enterprise, 122-124.

\(^{52}\) Fenno, The Power, 370.

\(^{53}\) Green, et al., Closed Enterprise, 124.

effects it has." Below I examine the influence of antitrust on merges. First, I regress the annual merger level, $Y_t$, on the number of antitrust cases filed, $X_t$. OLS analysis implies that $X_t$ has a positive effect, which is not even in the expected direction, $b_{yt} = 3.67$, ($t=1.00$). Further, as $X_t$ is lagged, this positive relation actually increases. Antitrust activity, as measured by cases brought, does not appear to enhance economic competition.

But, a critic might object that these findings mask the true competitive effects of antitrust, because the merger variable includes conglomerate mergers, which became especially important in the 1960s. While the government has challenged conglomerate mergers, there is controversy over their impact. Some economists argue they can be quite anticompetitive, but others disagree. Ideally, then, the effects of antitrust should be assessed with conglomerate mergers excluded. However, as Stigler observes, "it seems incredible but it is true that all forms of merger are combined in the standard merger series."Nevertheless, it is possible to adjust the series for the presence of conglomerate mergers, using the merger by type data available since 1948. Therefore, I reduce total merger scores for these years, to the extent their conglomerate merger percentage exceeds the conglomerate merger percentage of the base period, 1948-51. (The computation of these adjusted scores is fully detailed in the footnote). This procedure tends to smooth out the

55 Wilcox and Shepherd, Public Policies, 111.
58 "Assets" and "number" data on all mergers by type are available back to 1948, for "large" mergers. The absence of these data on all mergers is not an obstacle. The number of large mergers, defined as the number of concerns with assets of 10,000,000 dollars or more acquired, correlates almost perfectly with the total number of mergers, $r = .955$, for 1948-1973; data on the number of large mergers were obtained from U.S. Federal Trade Commission, Bureau of Economics, Statistical Report on Mergers and Acquisitions, (Washington, D.C.: Government Printing Office, October, 1973, 61-62). The proportion of merger activity which is conglomerate is virtually identical, regardless of whether the determination is by number of concerns acquired, or assets acquired. (For 1948-1973, conglomerate mergers were 73.1 percent of the large mergers, representing 74.1 percent of the assets acquired; see U.S. Federal Trade Commission, Bureau of Economics, Statistical Report on Mergers and
potentially confounding conglomerate merger wave, and leave a series with variations attributable largely to horizontal mergers, which are unambiguously anticompetitive. If I regress (OLS) this adjusted merger series, labelled here and elsewhere as $M_t$, on antitrust cases, $X_t$, the following results are obtained:

$$M_t = 552.16 - 1.65X_t + e_t$$

$$(6.20) \quad (-.53)$$

$R^2 = .004 \quad d = 1.02 \quad N = 79$

While the slope is now in the expected direction, it is not close to being statistically significant. Even adjusting for conglomerate mergers, the antitrust enforcement of the Division does not appear to foster economic competition.

However, a further protest might be raised. When the residuals from Eq. 3 are plotted against time, a serious deviation occurs at 1899, where the observed score is more than five standard errors of estimate above the predicted score. The presence of such an extreme outlier, which represents the peak of the first merger wave, may be distorting the overall estimate of effect. If the 1899 observation is excluded by simply taking 1900 as the beginning year of the series, rather than 1895, OLS yields $b_{m,x_t} = .77$, ($t = .36$). Still antitrust manifests no effect. Another approach is to log $M_t$.

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I employ the “assets acquired” measure because the series is more complete, with data available for individual years, or smaller groups of years; for 1948-1959, see FTC, *Economic Report*, 673, Table 1-9; for 1961-1964, Census, *Statistical Abstract* 1969, 485, No. 712; for 1960, 1965-1973, Census, *Statistical Abstract* 1977, 569, No. 932. The years at the beginning of the series, 1948-1951, with 37.5 percent of the assets acquired in conglomerate mergers, serve as a base period. (In order to analyze the entire series, 1895-1973, establishment of some allowable, base proportion of conglomerate mergers was necessary. If all the conglomerate mergers were simply removed from the merger scores for each year from 1948, then overadjustment would result. That is, one would be left with a series where the observations before 1948 contained conglomerate mergers, but the observations for 1948 and after counted no conglomerate mergers at all.)

59 The number of vertical mergers has been few and essentially constant over time; as a source of constant error, they do not threaten the validity of the ensuing estimates; see Herbert L. Costner, “Theory, Deduction, and Rules of Correspondence,” in *Causal Models in the Social Sciences*, ed. H. M. Blalock, Jr. (Chicago: Aldine, 1971), 299-305.
which, in addition to pulling in outliers, preserves the sample size. Using OLS,
\[ \log e M_t = 5.88 + .0024X_t + e_t \]  
(1.4)  
\[ (42.04) \quad (.49) \]
\[ R^2 = .003 \quad d = .42 \quad N = 79 \]
Once again, enforcement shows no impact on mergers.

Because the Antitrust Division is the prime enforcer of the antitrust laws, its failure is most critical. However, there are other institutions with antitrust responsibilities which must shoulder part of the blame for an ineffective policy. The antitrust tasks of the FTC are quite similar to the Division's. Despite possible advantages as an independent administrative agency, the FTC has tended to concentrate on minutiae. In the 1960s, its reputation fell so low that its dismemberment was even called for.\(^60\) Some contend that it has undergone revitalization, beginning with the leadership of Miles Kirkpatrick in 1969. However, other observers are skeptical about any real change in FTC performance. As Wilcox and Shepherd recently commented, "Frequently being 'revitalized,' it is rarely vital."\(^61\) Clearly, the FTC has had no effect on anticompetitive behavior, according to my analysis. When the merger variable, \(M_t\), is regressed (OLS) on FTC antitrust enforcement, \(X_t\), as measured by the number of "restraint-of-trade" cases instituted each year, 1915-1974, (mean = 18.72, standard deviation = 18.17), then
\[ b_{m_t x_t} = -2.69, \quad (t = -1.22). \]
Antitrust enforcement at the FTC has not resulted in significant reductions in anticompetitive activity.

Thus far, the focus has been on antitrust actions of the FTC or the Division. However, a great number of private cases have been brought as well. In the period 1965-1969, for example, 2,822 were initiated (excluding electrical equipment cases). Data problems stand in the way of a profound analysis of the impact of these private suits. A record of private antitrust cases filed before 1938 does not exist. Further, many private cases result from a Department of

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\(^61\) Wilcox and Shepherd, *Public Policies*, 143.

Justice judgment. Also, a large number of private suits may follow from one antitrust violation. For these reasons, Posner asserts that in "no event would it be proper" to combine these private cases with the public ones in order to form an aggregate measure of antitrust activity.63 However, he does provide some rough estimates for the pre-1938 period, along with more reliable estimates for subsequent years, which allow construction of a crude private cases variable, Xt.64 Regressing (OLS) mergers, Mt, on Xt yields \( b_{m_t^X} = .51, (t = 1.31) \). This finding implies the bringing of private antitrust cases does not influence merger activity significantly.

A possible criticism of "number of cases brought" as a measure of antitrust activity is that it does not capture the qualitative dimension. For example, perhaps the Division has begun to bring fewer, but more important, cases. Posner doubts this contention, arguing that in such a situation average case length would increase, which it has not.65 However, it would be useful to have a more direct indicator of the qualitative side of enforcement. While there are many characteristics that distinguish a case as important, an overriding one is cost. For a major suit, the Division can easily spend 500,000 dollars.66 Hence, one global measure of enforcement quality is the size of the Division budget. The expectation, then, is that increased expenditures reduce anticompetitive behavior, other things being equal. But, regressing (OLS) mergers, Mt, on the Division budget (in constant dollars), Xt, yields \( b_{m_t^X} = 3.54, (t = 2.37) \). Heightened Division expenditures do not appear to lower the merger level. The finding is repeated when the equation is estimated (OLS) to assess the effect of FTC budget increases (in constant dollars), \( b_{m_t^X} = 2.56, (t = 3.21) \).67 Clearly, greater spending

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64 Ibid., 371, provides figures for 1895-1969, for five-year periods. To obtain a rough estimate of the private cases for each year, it was necessary to divide the total for the relevant five-year period by five. For example, the total for the 1945-1949 period = 399; thus, the estimate for, say, 1946 = 399 ÷ 5 = 79.8.
66 Wilcox, Public Policies, 90.
67 The Federal Trade Commission budget figures (in thousands of current dollars) for 1921-1975 were taken from the actual outlays reported in the appropriate issues of U.S., The Budget of the United States Government (Washington, D.C.: Government Printing Office). To adjust the budget figure from current dollars to constant dollars, it was divided by the year's Consumer
by the enforcement agencies has not at all dampened anticompetitive merger activity.

Thus far, the important role of the courts has been neglected. Under the first fifty years of the Sherman Act, the Supreme Court was hesitant to act against manufacturing combinations. After the landmark U. S. Steel case of 1920, monopolistic combinations appeared virtually legal. However, more rigorous interpretations of the law have been reinforced by passage of the Celler-Kefauver Antimerger Act in 1950, which strengthened Section 7 of the Clayton Act. In fact, the courts have upheld the Antitrust Division and the FTC in every major case brought under Celler-Kefauver. 68 While conglomerate mergers are covered, it is generally acknowledged that the Celler-Kefauver Act has been most effective against horizontal mergers. 69 Further, according to some, this antimerger statute has exercised an anticompetitive deterrent beyond that coming from the formal sanctions. In this view, firms have actually decided not to merge because the law has become so "strong." 70 Thus, one might expect Celler-Kefauver to have an impact on merger activity greater than the actual number of antitrust cases would imply. An estimate of the courts' effect, and the Celler-Kefauver Act in general, comes from analysis of the time-series of the adjusted merger variable, $M_t$. The hypothesis is that post-1950 anticompetitive merger activity would be significantly lower than pre-1950 anticompetitive merger activity. To test this hypothesis, I regressed $M_t$ on a dichotomous dummy variable for time, $X_t$, scored "0" if the observation occurred in 1950 or before, and "1" if the observations occurred after 1950. Estimating (OLS) the equation yields a slope of $b_{M_tX_t} = 151.70$, ($t = 1.22$). These findings indicate that the recent, sterner antitrust opinions of the courts, and the Celler-Kefauver Act more generally, have not managed to reduce anticompetitive mergers below the earlier level. While this assessment departs from the prevailing view, support comes from

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68 See Wilcox, *Public Policies*, Ch. 7, for a good discussion of antitrust in the courts.


70 Elzinga, "The Antimerger Law," 43-44.
Kenneth Elzinga, who finds that government victories under this antimerger statute have been overwhelmingly "Pyrrhic," for they do not provide "effective relief." Without "effective relief," i.e., the undoing of the illegal aspects of the merger, there is no real cost to breaking the law, and it will be broken.

In the preceding paragraphs, I have looked at the effects of various antitrust activities, in turn, on merger activity. The results of this analysis are conveniently summarized in the CORC estimates of the following multiple regression equation:

\[
M_t = 690.8 + 2.6X_{it} - 2.4X_{2t} - 6.6X_{3t} + 2.4X_{4t} + 6.64X_{5t} - 27.9X_{st} + e_t
\]

(3.6) (1.2) (-.8) (-1.3) (.8) (.4) (-3.0)

\[R^2 = .76 \quad d = 1.64 \quad N = 52\]

where \(M_t\) = annual mergers (adjusted for conglomerates); \(X_{it}\) = annual number of antitrust cases initiated by the Division; \(X_{2t}\) = annual number of restraint-of-trade cases instituted by the FTC; \(X_{3t}\) = the annual Antitrust Division budget (constant dollars); \(X_{4t}\) = the annual FTC budget (constant dollars); \(X_{st}\) = a dummy variable for the Celler-Kefauver Act, scored "0" for 1950 or before, and "1" after 1950; \(X_{st}\) = annual unemployment rate; the \(N\) covers years 1922 to 1973 (one observation of the initial 53 was necessarily lost with CORC); the values in parentheses are the \(t\) ratios. Anticompetitive mergers are influenced by general economic conditions, as the significant coefficient for the unemployment rate indicates. But, they have not been significantly depressed by the presence of the Celler-Kefauver Act, or the enforcement efforts of the Antitrust Division and the FTC, either in terms of cases brought or money spent.

What accounts for the failure of antitrust? Probably, the most important reason is the extremely limited resources at the disposal of the agencies. A corporation under attack may doubt that resources are so scarce. William E. LaMothe, president of the Kellogg Company, in responding to the FTC assault on concentration in the breakfast cereal business, lamented "its enormous power and enormous budget and its enormous staff." However, perhaps

\[\text{Ibid.}, 43-53, 74-76.\]

\[\text{See Nelson, Merger Movements; Goldberg, "The Effects of Conglomerate," 141-142.}\]

\[\text{New York Times, August 8, 1976, Sec. F, 12.}\]
Ralph Nader's summary is more generally accurate: "The posture of two agencies [the Division and the FTC] with a combined budget of $20 million and 550 lawyers and economists trying to deal with anticompetitive abuses in a trillion-dollar economy, not to mention an economy where the 200 largest corporations control two-thirds of all manufacturing assets, is truly a charade." When the Antitrust Division, for example, takes up a case, it is routinely outgunned. By comparison to the industry under challenge, which can generally muster whatever resources are needed for its defense, the efforts of the Division are meager. On the average, only two or three lawyers attend to each of the nation's five or so largest industries. For a major case, maybe four or five lawyers, with a couple of economists, will be involved. Further, while major suits are especially costly, the total Antitrust Division budget, in 1975 for example, was only 16,700,000 (current) dollars.

To attribute ineffectual antitrust enforcement to limited resources, even though the budget variables examined in Eq. 5 manifest no impact on mergers, implies there is a threshold effect. For instance, the Antitrust Division budget level has not yet influenced mergers, because the upper bound on expenditures has been so low. If the budget could be meaningfully increased beyond the values observed thus far, it would significantly curtail merger activity. Some economists argue that, optimally, this increase should be five-fold. But it is by no means certain that this robust increment would be sufficient. As critic Edward Mason remarked, "Even if the Antitrust Division and the Federal Trade Commission enjoyed appropriations five times as large as they now have, they could not conceivably bring a tenth of the cases it would be possible to bring." A rather pessimistic inference is that the budget increases needed for effective antitrust enforcement are of a magnitude which bars their acceptance in the congressional political arena.

Conclusions

Antitrust has not worked to protect the competitive structure of the American economy. More precisely, the efforts of the Antitrust Division, the FTC, and the courts have exerted no significant nega-

74 Green, et al., Closed Enterprise, xii.
75 Wilcox and Shepherd, Public Policies, 122.
76 Ibid., 122.
77 Quoted in Green, et al., Closed Enterprise, 115.
tive effect on anticompetitive mergers, according to the regression models estimated here. The American public continues to bear the costs of lessened competition, such as higher prices, greater corporate profits, reduced technological innovation, more economic inequality. At most, antitrust actions have symbolic value. The knowledge that the antitrust division and the FTC are at work, coupled with the observance of an occasional court ruling against a major company, act to convince people that a competitive economy is being preserved. They are further reassured with favorable antitrust utterances by political figures of both parties. In fact, antitrust endorsement, not antitrust enforcement, is part of the ritual behavior of American politicians.

The lack of antitrust impact becomes more understandable when the linkages of government and the corporations are recalled. Effective law enforcement implies an antagonistic, watchful relationship between "police" and possible "lawbreaker." The idea of government as a regulator of business stresses this conflictual image. However, government normally aims to help corporations rather than constrain them. According to some investigators, the national economic regulatory bodies were originally created at the urging of big business. In the view of Daniel Elazer, the business community still appears, by and large, to support federal regulation. The formal assistance of government to corporate enterprise, which includes special subsidies, services, tax benefits, and contracts, is extensive and growing. Informally, high level officials can be persuaded to bend in favor of corporate interests. In the Senate, for example, liberals as well as conservatives quickly sacrifice antitrust principles: "Senator Hartke is for steel quotas, Senator McCarthy supported the oil and drug industries, Senator Muskie favors shoe quotas, and Senator Javits . . . wants to disembowel our foreign antitrust efforts." The pervasive lack of real commitment to a policy of competition is summed up by the minuscule Antitrust

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81 See Wilcox and Shepherd, Public Policies, Ch. 25, for a review of this aid.
82 Green, et al., Closed Enterprise, 59-60.
Division budget, which virtually guarantees antitrust activity will be no more than symbolic.

The prospects for meaningful antitrust reform appear rather dim. Any serious effort would require the allocation of much more money than is likely to be forthcoming. Both Democrats and Republicans, whether in the White House or in the Congress, seem satisfied with the Antitrust Division budget, small as it is. Among those who make policy, maintaining economic competition is in reality a very low priority. In such a circumstance, recent possibilities, such as the Industrial Reorganization Act and the federal chartering of corporations, cannot be expected to alter significantly American economic patterns.